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“What’s on the interface tonight?”

A longitudinal analysis of the publishing strategies of public service video-on-demand platforms in the UK and Denmark

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“What’s on the interface tonight?”

A longitudinal analysis of the publishing strategies of public service video-on-demand platforms in the UK and Denmark

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Abstract

This article presents a new method for analysing video-on-demand (VOD) publishing strategies over time. It demonstrates this method on two public service media [PSM] VOD platforms from two countries: BBC iPlayer in the UK and DRTV in Denmark. The article begins with a close analysis of their respective interfaces to contextualise our subsequent “distant reading” (Moretti, 2013) of these platforms. We use distant reading to examine the spatial and temporal patterns present in both interfaces, with our analysis based on two original data sets that have been compiled over a period of approximately 14 months (beginning in August 2019). This data is analysed and visualised in order to reveal patterns and anomalies at a macroscopic level. Through a close and distant reading of these services, we offer valuable new insights into, and metrics for, the performance and publishing strategies of PSM VOD platforms.

Keywords

Video-on-demand, distant reading, data visualisation, public service media, BBC iPlayer, DRTV

Introduction

Video-on-demand [VOD] interfaces have become a ubiquitous feature of the contemporary television viewing experience. In some contexts, VOD consumption has even overtaken traditional linear viewing (Oakes, 2020). In the UK, for example, a recent study commissioned by tech giant Samsung found that TV consumption via streaming now exceeds traditional linear viewing for many demographics (*ibid.*). The growth of streaming and the proliferation of VOD platforms have profound implications for how television is organised, delivered and experienced. Historically, broadcasting has utilised the organising principle of scheduling (Bruun, 2020; Ellis, 2000; Williams, 1974), in order to attract and retain viewers and, in the case of public service broadcasters (PSBs), to ensure the delivery of public service values. However, we contend that VOD platforms operate according to a logic that is more akin to publishing (Kompere, 2006) and thus they require new methodological and conceptual frameworks.

In the last few years there have been a growing number of studies of VOD platforms but these accounts tend to be limited to analyses of individual markets (Johnson, 2017, 2019) or global platforms (Kelly, 2020; Lobato, 2018). Moreover, whilst there is a growing body of literature addressing VOD interfaces from various perspectives (Chamberlain, 2011; Grainge & Johnson, 2018; Johnson, 2017, 2019; Lassen & Sørensen, 2021; Sørensen, 2019), very little of this material has made use of quantitative research methods, with some exceptions (e.g. Thurman (2020)). This article builds on a method for scraping and visualising VOD interfaces described in another recent publication by one of the authors (Kelly, 2021). Although some of the main methodological challenges and rationales have already been outlined in that earlier piece, this article is more concerned with developing a method for examining different VOD platforms, and thus it involves and introduces an entirely new set of methodological challenges.

Given the rich history of exchange between different national broadcasters – particularly those in Europe – in terms of co-production and collaboration, we are long overdue a transnational study of public service VOD platforms. The wealth of comparative studies of national TV broadcasters demonstrates the value of such an endeavour (see Ytreberg (2002) and Steemers (1997)). For instance, Michelle Hilmes's (2003) comparative study of the formative years of public service broadcasting in the UK and the commercial system in the US demonstrates that "the development and function of broadcasting in Great Britain and in the United States has been much more tightly interlinked than history has generally acknowledged" (*ibid.* p.14), thereby challenging the notion of a clear-cut public service/private profit dualism. Whereas Hilmes's account seeks to question and dismantle the discursive dualism of public service and commercial television, our research considers how the former operates within different national contexts, with a particular concern with how PSB values are expressed via VOD publishing strategies. In doing so, we propose some tentative methods and metrics for the measurement of PSB VOD platforms, and

we use this transnational approach to consider how these publishing strategies vary (or remain the same) in different national contexts.

Such research is necessary not only because public service VOD platforms are less often the focus of critical scrutiny compared to their commercial counterparts, but also because of the high level of regulation to which they are subject as a result of their public service contracts or charters and, at an operational level, by a set of core values. The most prominent of these values are PSB's Reithian objectives to inform, to educate and to entertain, and to ultimately contribute to societal cohesion. Compared to other VOD services (particularly commercial platforms such as Netflix), these values, norms and regulatory requirements contribute to the prioritisation and presentation of content within the interface. As such, our method is a first step towards understanding whether the editorial policies and core values of PSBs traditionally reflected in the curation of broadcast schedules can also be observed in the composition of VOD interfaces.

Our article begins with a brief overview of relevant work on VOD interfaces, demonstrating the need for a more quantitative intervention. This is followed by a close analysis of the interfaces of BBC iPlayer and DRTV in order to consider the extent to which PSB values are inscribed within their design and features. From here, we offer a "distant reading" (Moretti, 2013) using two original datasets. By "distant reading" we refer to Moretti's conception of the term, which was originally used to describe a method of examining patterns within/across large corpora of texts, but which has since become a key method within the digital humanities and has been applied to a range of cultural forms (e.g. Manovich, 2009). Ultimately, this article identifies and demonstrates the need for a novel methodology and new metrics that can measure VOD publishing strategies on a longitudinal scale.

Background

Our novel method is offered at a crucial time in which there are growing discussions around the policy and regulation of VOD platforms, and in which the remit and relevance of public service media are the subject of heightened contestation (Donders, Raats, & Tintel, 2020; Harrison & Wessels, 2005; Jakubowicz, 2006; Steemers, 1999). Whilst both BBC iPlayer and DRTV have been around for more than a decade, our understanding of how these platforms deliver public service values is far from complete (cf. Mazzoli & Tambini [2020:4]) and requires empirical data as well as comprehensive descriptions of these public service VODs. However, studying these platforms is far from straightforward. As has been noted elsewhere (Distelmeyer, 2018; Kelly, 2020), interfaces have become an integral part of media culture yet are highly resistant to analysis. Nevertheless, there is a growing body of work exploring VOD interfaces, with many of these demonstrating innovative ways to examine these highly ephemeral objects of study (Bruun, 2020; Stanfill, 2015; Thurman, 2020). Even so, the challenges of studying VOD platforms are manifold. Unlike a television schedule, there is no one version (or single experience) of a VOD

interface. As one Netflix executive noted in 2013, "there are 33 million different versions of Netflix" (Finn, 2017, p. 95). Personalisation and its algorithmic opacity (Bucher, 2018; Gillespie, 2014; Hallinan & Striphas, 2016) is one reason as to why interfaces are highly resistant to analysis. In addition to this, their design and their features are also subject to constant change. The catalogues upon which these interfaces and algorithms operate are also subject to "permanent reconfiguration" (Kelly, 2020; Parikka, 2012). These are not fixed collections, but highly ephemeral databases of content, which pose further methodological challenges (Lobato, 2018). However, in our examples, personalisation currently plays a relatively minor role (Kelly, 2021; Lassen & Sørensen, 2021) and therefore presents less of a methodological challenge. Given the limited degree of personalisation present on either platform, we were able to visit both sites without requiring the use of a login and therefore without content offerings being compromised by user-activity, for example recommendations based on past browsing or viewing history. The interfaces are thus analysed as they are presented to an anonymous user with no usage history.

To date, most work on VOD interfaces (Chamberlain, 2011; Johnson, 2017, 2019; Stanfill, 2015) has been based on close analysis of the formal features of VOD interfaces (design, layout, navigation, etc.). Whilst these accounts make important contributions to our understanding of VOD platforms, they only tell us part of the overall story and tell us little if anything about longitudinal patterns in content exposure. By contrast, distant reading (e.g. Kelly, 2021; Moretti, 2013; Sørensen, 2020) provides an opportunity for researchers to adopt a more macroscopic view of VOD interfaces, in the process revealing longitudinal patterns and publishing strategies. As such, we contend that distant reading is a necessary method in order to actually measure and document these strategies. It is one thing to have a policy, and quite another for that policy to actually be put into practice.

By undertaking close and distant readings of these interfaces, our aim is to offer a more nuanced and holistic view of the publishing strategies of these different PSB platforms. Indeed, certain aspects of VODs are only apparent through close textual analysis, whilst others are only evident via distant reading. Some features of VOD interfaces, for instance, are especially resistant to distant reading as they can be difficult if not impossible to quantify. This includes their usability and content appeal, which are most effectively addressed via close textual analysis. As such, our distant reading of these platforms focuses primarily on the size, layout and frequency of repetition within each interface, whilst our close analysis focuses on less quantifiable features.

Method

Case Study: Selection and Contexts

Following Flyvbjerg (2006), who argues for case study as a scientifically legitimate mode of producing general insights, we have selected two VOD interfaces provided by North European public service broadcasters as paradigmatic cases. We plan to include a wider

array of VOD interfaces in future research, but the aim of this paper is to initially test and demonstrate our novel method. The two cases have been selected as they include a number of formal and contextual differences that invite comparison. Whilst direct comparisons present a number of challenges, our quantitative approach enables us to circumvent some of these through the abstraction and visualisation of our findings. However, further interpretation of these findings calls for a more complex and nuanced contextualisation, such as differences in legal/policy frameworks enabling the VOD services, differences in internal strategies, differences in the portfolios of linear channels, differences in market situations, managerial differences, and so on. Explaining the findings beyond initial observations thus opens up a very wide range of possible explanations. In order to demonstrate the different ways in which our data-driven observations could be further contextualised and explained, we conclude with a discussion of our findings in relation to the policy and legal frameworks that govern the two services.

Our first case study is BBC iPlayer, which is offered by the world's oldest public service broadcaster. The BBC was originally established as a private organisation in 1922, but from 1926 onwards it became a public entity operating under a Royal Charter. Around the world the BBC was, and still is, a blueprint and role model for public service broadcasting. The BBC's national public service activities take place in a large and competitive English-speaking TV home market. In 2020 the BBC received GBP £3.52 billion (approximately EUR 3.881 billion) in licence fees (BBC, 2020, p. 171). Our second case study, the VOD service DRTV is offered by DR ("Danmarks Radio"), a much smaller organisation but, established in 1925, it is almost as old as the BBC. DR operates in a much smaller Danish market of 5.8 million inhabitants and offers a large part of its programming in Danish. DR also operates on a much smaller budget than the BBC. In 2019 DR received DKK 2.721 billion (approximately EUR 366 million) in licence fees (DR, 2020, p. 25). In terms of size, the two organisations are very different, but both are shaped by core ideas of public service as expressed (Jakubowicz, 2006; Jauert & Lowe, 2005; UNESCO, 2001) and regulated by specific obligations for the production and dissemination of content, expressed either in a public service contract (DR) (Kulturministeriet, 2018) or in a Royal Charter (BBC) (Department for Culture, 2016).

Data Collection

The two websites respectively of BBC iPlayer and DRTV were visited daily by the authors and the content of the two front pages was compiled into two separate databases. Although both VOD services are also available on apps for smart phones, tablets and smart TVs, we focus our analysis on the browser-based web interfaces. We did not utilise page logs, which means that our analysis is based on the anonymous and non-personalised versions of each interface, see Kelly (2021). The two data sets document the exposure of video content for the VOD interfaces of BBC iPlayer and DRTV, their position within the page and the headline / category under which they are presented. The

data that was collected was subsequently prepared for analysis through a validation and cleaning process addressing, amongst other things, ambiguities in the data.¹ The analyses presented in this paper are based on data that spans approximately 14 months – from August 13, 2019 to October 2, 2020. However, due to technical problems, not all days have been captured correctly and thus we include 417 days in our analysis.

Following the collation and cleaning process, the data set was then analysed in order to reveal patterns and anomalies at a macroscopic level. In the course of analysing the data, we highlight a number of notable differences (and some similarities) in the strategies of both platforms. Our approach is informed by John Tukey's (1977) model of "exploratory data analysis" (EDA), in which the goal is to summarise the main characteristics of the data set rather than to use said data to reinforce preconceived hypotheses. In this way, EDA gives the data more agency by allowing it to "speak for itself". Following this model of EDA, this article focuses on what we believe are the three most salient features of the data, and which we believe could therefore be used as the basis of metrics for measuring the performance and publishing strategies of VOD platforms. They are as follows:

- (i) The size and grid structure of each interface
- (ii) The degree of content repetition within each interface on the same day
- (iii) The degree of content repetition within each interface over consecutive days

Ultimately, our analysis will demonstrate that despite their shared core values, PSB services often operate in very different ways to achieve the same (or similar) objectives. Just as Hilmes's account of the UK and the US sought to deconstruct the notion of a public service/private profit dualism, our comparative study of PSBs in the UK and Denmark seeks to deconstruct the notion of a public service monoism by highlighting fundamental differences in both interfaces and in both national contexts.

Terminology

We analyse the VOD interfaces as a number of rows with content items in a specific sequence. A content item is a reference to a video playback web page. Typically, an item is represented with a picture and programme title, optionally with a sub-headline indicating a genre or providing other additional information (such as duration, availability or synopsis). A content item can either represent a single programme, an episode of a series, or an entire series of a programme.² By recording the content items we are able to analyse the position(s) of programmes (represented with the programme title) within the two VOD

1 E.g. data from DR contains ambiguous genre-labelling of content and an inconsistent labelling of episodes.

2 In the case of DRTV it cannot in all cases be determined whether a content item refers to a single episode or a series as episode info in some cases has been omitted by DR.

pages over time. We distinguish between "content items" and "programme titles" as the same programme title can appear in more than one content item on the screen. Finally, we record the headings typically shown above the rows. As each row is a collection of either manually or algorithmic chosen programmes, we term these row headings "collection titles".

Methodological Challenges

The practical challenges are located at two levels: at the level of collecting data and at the level of analysis. At the level of collection, the methodological questions are: Which browser should be used? The choice could potentially influence the detailed appearance of the content. What size of browser window should be used? This determines the user's perception of the choice. When, and how often should the sites be sampled? This defines the analysis of changes over time of the page, including the effects of possible randomisation of the row-/page composition as well as timing of publication. At the level of analysis, one challenge is to determine whether a content item refers to an episode, a stand-alone programme or a whole series or season. There are particular inconsistencies in DRTV's display of this information, which introduces analytical uncertainty. Both the BBC iPlayer and the DRTV VOD interfaces offer genre information, but in the case of DRTV several EBU-based genres (European Broadcasting Union, 2007) are shown for the same programme over time. This makes an analysis at the level of genre more difficult to conduct. Subsequently, for DRTV we establish tentative genres based on the collections in which the content is presented. The detailed genre-based analysis of content and presentation remains, however, a future research task.

Case Description

BBC iPlayer

Although BBC iPlayer was not the first PSB VOD platform in the world, or even the first in the UK (it was preceded by Channel 4's All 4, then known as 4oD, by more than a year), it is perhaps one of the most successful and well-known PSB platforms – both in terms of design and in terms of website traffic. In terms of the former, BBC iPlayer has undergone a number of significant design changes, to the extent that it is almost unrecognisable from the version that first appeared on Christmas Day in 2007. Whilst it is not possible to describe these various changes in detail, broadly speaking BBC iPlayer has undergone a number of different iterations or phases, each of which has included significant changes to its layout, its features, and its underlying systems.

Article: "What's on the interface tonight?"



Figure 1. BBC iPlayer as it appeared in December 2008.

We can use close reading to demonstrate that implicit in each of these phases and inscribed into the very design of each iteration of the interface are clear strategies for delivering PSB values – though, it should be noted, these strategies are not necessarily

antithetical to commercial objectives. Early on, for example, there was an emphasis on user-led discovery via categories and sections (such as TV and radio), which can be seen as placing the onus on the user. In this way, it could be argued that this early design fulfils ideals of public service value by providing equal visibility to a wide range of navigational options (TV channels, radio, schedule, most popular, etc.) and therefore giving viewers the freedom of choice (even if this freedom of choice perhaps clashes with the paternalistic impulses of Reith and the television schedule). Since this early version, however, BBC iPlayer has become much more streamlined in its design, doing away with the various navigational windows that appeared in its first iteration. In adopting this simple “wall-of-content” design, BBC iPlayer has become a destination that is distinct from broadcasting through limiting the prominence of channels (Kelly, 2020) and putting more emphasis on content curation. Of course, commercial platforms which have no public service obligations often feature similar designs (the current iteration of BBC iPlayer is not too dissimilar to the “wall-of-content” and carousel approach of Netflix – on the surface, at least). As such, it is necessary to pay close (and distant) attention to the iPlayer’s interface in order to fully understand how it delivers (or fails to deliver) PSB values.

The current version of BBC iPlayer is one of the objects of analysis for this article (the data set only goes back as far as the beginning of this iteration of BBC iPlayer). Like DRTV, this version of BBC iPlayer is highly curated and makes use of a range of labels to describe the content assembled in each row. Sometimes these rows are named using specific generic labels (films, documentaries, drama, comedy), whilst at other times they use more functional and/or algorithmically generated categories (most popular, “if you liked...”). The

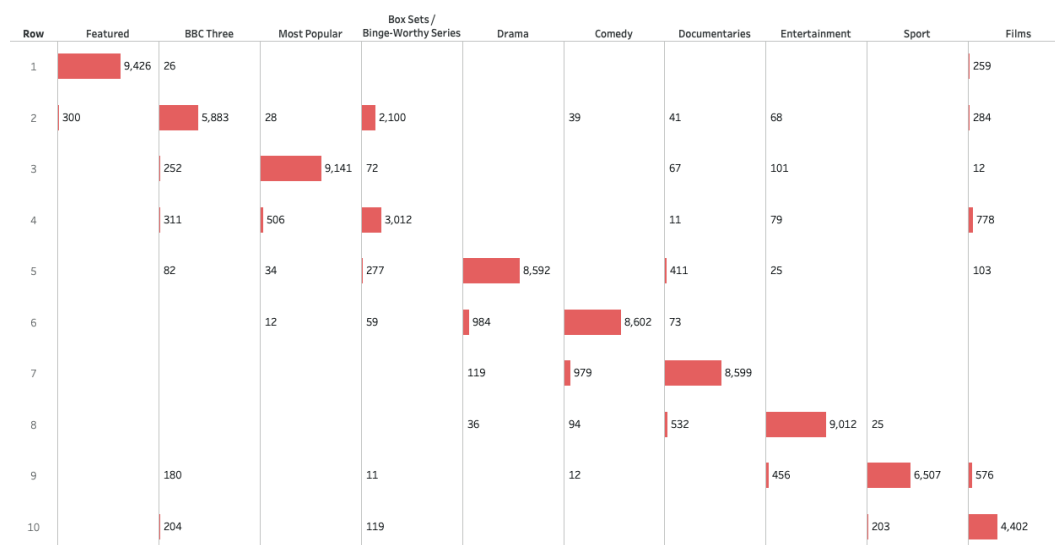


Figure 2. The distribution of the 10 most popular “collection titles” on BBC iPlayer. Note the way that these collections are primarily concentrated in one or two rows within the interface.

Article: “What’s on the interface tonight?”

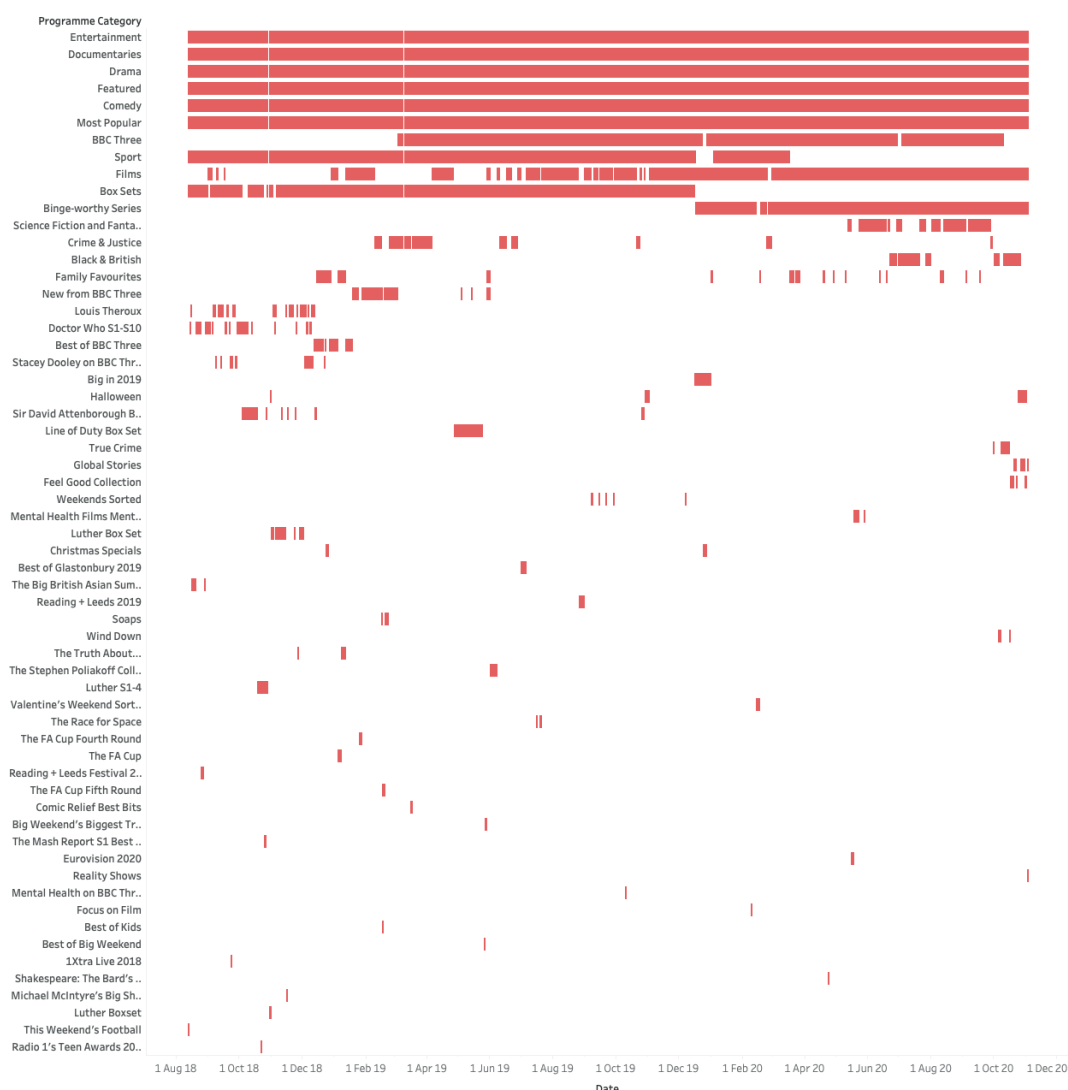


Figure 3. The appearance of categories over time on BBC iPlayer. Note the introduction of “binge-worthy series” in place of “box sets”.

interface also includes a single “featured” title, which sits above all rows and which first appeared intermittently in early 2020 but has since become a staple feature of the iPlayer interface (since late 2020). Because of its inconsistent and relatively recent appearance, the “featured” title has been omitted from this particular analysis (though, it should be noted, it is possible to retrospectively add these to the data set using archive.org’s captures of BBC iPlayer).

Whilst the close analysis of BBC iPlayer above is somewhat cursory, it nevertheless highlights some interesting characteristics and features of the platform. The use of collection titles to curate VOD offerings is one such insight. If we move from a position of

close to distant reading, we can suddenly see broader patterns and publishing strategies. For example, if we look at the location of these collection titles over time, we see that they tend to appear in the same row (see Kelly, 2021) (see Figure 2). This provides further evidence of the highly organised and curatorial nature of PSB platforms such as BBC iPlayer. Across the data set (from August 13, 2019 to October 2, 2020) there are a total of 28 different "collection titles". Of these 28 collection titles, six appear every day (entertainment, documentaries, drama, featured, comedy, most popular all appear in all 417 days in the data set). Several others appear most days (BBC Three – 409 days; films – 392 days) or just over half of the days covered by the data (binge-worthy series – 285 days). This longitudinal reading of categories on BBC iPlayer provides further evidence of the highly standardised nature of how content is presented to viewers. As we will see in a moment, DR's approach is far more complex and varied.

DRTV

As with BBC iPlayer, DR's video-on-demand service has also developed from an online experiment, into a catch-up catalogue, and finally to a curated VOD service in its own right. The organising principle has also changed from being a platform largely structured around channels to one that has become more characterised by thematic curation (see Lassen & Sørensen, 2021). DR's VOD service was launched in October 2005 and offered 31 videos.³ Fifteen years later, in December 2020, more than 1,400 videos – individual programmes as well as episodes – were displayed in the alphabetical listing of DR's VOD.⁴ In total 14,452 hours of TV programming was available in 2019 via DRTV (DR, 2020, p. 6).

DRTV's front page interface has significantly more rows than BBC iPlayer's ten rows. During the period of analysis, we see an average of 22.9 rows (min.: 18, max.: 33) for DRTV. Visually, some rows are highlighted with high-contrast background colours or feature differently sized images, mimicking the DVD cover format. This is in stark contrast with BBC iPlayer, which utilises a standard and consistently dark background for all titles (with the exception of the main featured title). As with BBC iPlayer, DRTV's rows are titled with descriptions of the curated content – so-called "collection titles". During our sampling period, collection titles appear, disappear and reappear in different rows. In total we find 129 different collection titles during the sampling period. DRTV's use of both capital letters and lower-case letters, and typographical errors in collection titles, results in 113 unique collection titles. However, to remain faithful to the original text as an expression of marketing intentions – e.g. CAPITAL letters to attract attention – we count 129 collection titles in total. Three of the 113 unique collection titles are present in the interface every

3 <https://web.archive.org/web/20051026003719/http://www.dr.dk:80/drdkTV/html/nettv.asp> accessed 2019-08-03.

4 <https://www.dr.dk/tv/programmer/alle/> accessed 2019-09-22; included is all video content available from a Danish IP address.

day in the sampling period.⁵ In the middle field, with an exposure of between 25 and 75 Pct. of sampling days, we can identify 15 collection titles. A long tail of 90 collection titles appears less than 25 Pct. of the sampling days. Compared to iPlayer, DRTV clearly has a much more dynamic use of the collection title labelling. Future analyses will show the extent to which the same programmes appear under different collection title labels.

In our examination of the DRTV interface, we analyse the patterns and presence of collection titles in different rows over time. We understand collection titles as expressions of editorial intentions but in order to obtain a higher-level picture of DRTV's publishing strategy we categorise the 129 collection titles into eight analytical categories based on keywords and concepts in the collection titles, for example "Arets fiktionsserier – top ti" ("Top-10 of the year in fiction series") is categorised as "Drama". We acknowledge existing typologies, such as EBU's programme metadata categories made for public service reporting (EBU, 2007). Our categorisation, however, makes use of DRTV's collection titles rather than the EBU's established categories.⁶ In Figure 4, we present a graph of eight categories of collections in relation to their vertical position (row number) within the interface. News collections have a prominent position in the interface, present in 11 different row titles.⁷ Typically, news appears in rows 13 to 19, but during the sampling period news content is present twice elsewhere – in rows 2 and 3 – from 10/03/2020 to 17/08/2020 (which correlates with the first COVID-19 outbreak), and in September and October 2019, see Figure 5. This latter prominent appearance of news on the front page of DRTV is harder to explain and would require a detailed content analysis. In contrast to BBC iPlayer (see Figure 2), collection titles on DRTV are distributed much more evenly across the interface.

5 "Dansk drama i verdensklasse" ("Danish world-class drama"), "Nyt fra DR3" ("News from DR3") and "Altid godt selskab" ("Always good company"). A further six collection titles are present for 75 Pct. of the days: "Mest sette på DRTV" ("Most seen on DRTV"), "De nyeste danske dokumentarer" ("The newest Danish Documentaries"), "Dokumentar på DRTV – ugens udvalgte" ("Week's selected documentaries"), "De største programmer lige nu" ("Currently the biggest programmes" - an editorial selection), "Nyheder og Aktualitet" ("News and current affairs") and "Det bedste fra DR2 Temalørdag" ("Best of DR2 Themed Saturday").

6 The eight categories are: "Drama" (24 titles); "News", including current affairs and information regarding COVID-19 (11 titles); "Documentary" comprising all documentary collections regardless of topic area (26 titles); "Children" (1 title); "Sports" (3 titles); "Recommendations" collections presented as "Recommendations to you" (1 title); "Service" – collections that reflect either the content, e.g. "Expires soon" or its use, e.g. "Most seen" (9 titles); and finally, "Theme" which are collections centred on a specific theme, e.g. "Forstå konflikten i Iran" ("Understand the conflict in Iran") or "Frem med kagerullen" ("Get the rolling pin!") (54 titles).

7 'Seneste nyt om corona-situationen', 'Politik', 'Nyheder og Aktualitet', 'Seneste nyt', 'AKTUELLE PROGRAMMER', 'NYHEDER OG MAGASINER', 'BAG NYHEDEN – KORT FORTALT', 'DE VIGTIGSTE NYHEDER', 'DE VIGTIGSTE NYHEDER FRA TV AVISEN', 'Nyt og aktuelt', 'SENESTE NYT FRA TV AVISEN'. In some instances, collection titles alternate between upper- and lower-case letters. To preserve this effect we count these collections as two distinct collections.

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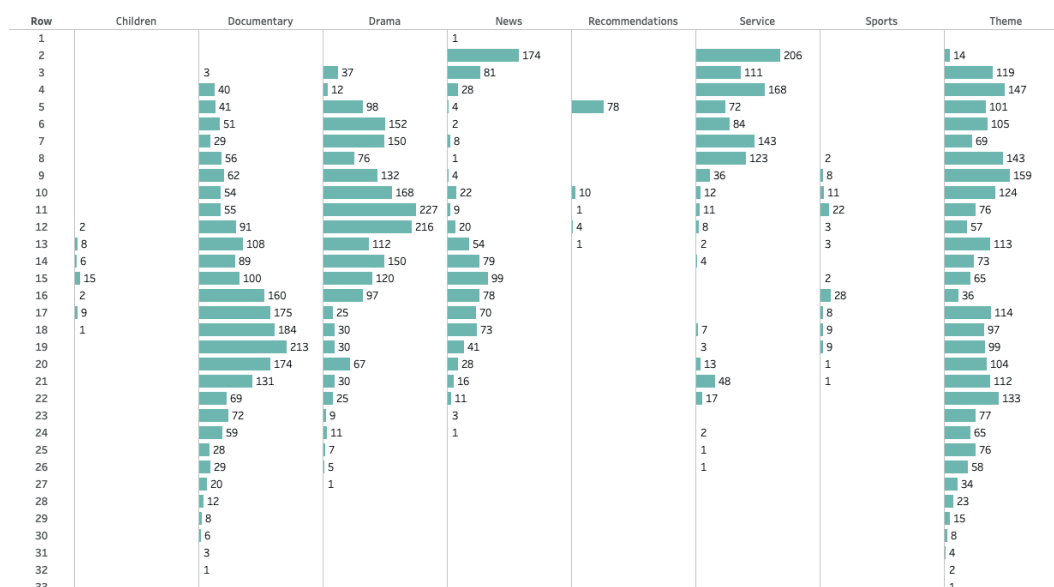


Figure 4. Row positions shown as number of days for eight categories of collections in the DRTV interface.

Taking a closer look into this categorisation of content, we observe an emphasis on, amongst other things, Danish-labelled content or channel brands. During the sampling period, 18 out of the 129 row titles contain either the words “Danish” or “Denmark”, e.g. “Store fortællinger fra Danmark” (“Great tales from Denmark”) – see Figure 5. This aligns well with the priorities as formulated in DR’s 2017 strategy document for how DR’s VOD activities can serve distinct public service purposes. Collection titles that refer to a broadcast channel, predominantly the now discontinued “DR3” channel, which was targeted at young adults aged 15–39, can also be observed (see Lassen & Sørensen, 2021) for further details).⁸ Analysing the curation of DRTV, we see a strong coordination between the scheduled broadcast and the editorial prioritisation of the content VOD. Based on (Lassen & Sørensen, 2021) we can see the mainstream channel DR1 being very present in the most visible parts of the page.

8 Resulting from a cut down of DR’s budget but also aligned with DR’s own plans for its VOD activities, DR3 as well as the culture channel “DRK” and the teenage-children’s channel “DR Ultra” ceased to operate as flow channels in January 2020. “DRK” disappeared as brand, but the two other channel brands continued within the VOD interface in the form of dedicated pages. The “DR3” and its programming was also being intensively marketed in the VOD interface shortly before the broadcast switch-off, indicating DR’s intention of strengthening the use of DRTV among the younger target group of DR3.

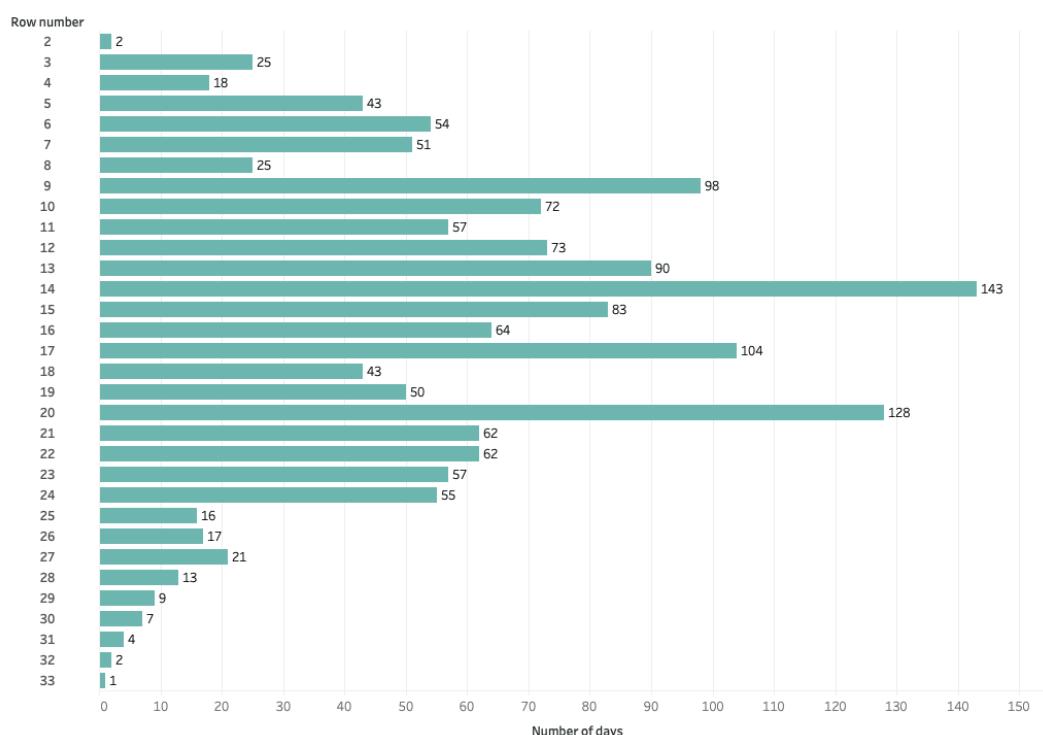


Figure 5. Position and number of days in the DRTV interface where collection title contains words “Denmark” or “Danish”.

A Distant Reading of BBC iPlayer and DRTV

As is clear from this close analysis of both platforms, there is good evidence to suggest that PSB values are inscribed into and realised via their very design (for more detailed example of this close analysis see Johnson 2017, 2019). However, as we have already begun to demonstrate, online publishing strategies of PSBs cannot simply be inferred via close analysis of their VOD interfaces. Rather, it is necessary to adopt a longitudinal and data-informed approach. It is only at this level of “distant reading” (Moretti, 2013) that we can identify these less visible techniques. To that end, we now turn our attention to our three key observations.

Size and structure of the interface

In Figure 6 we see that whilst BBC iPlayer has a fixed number of approximately 120 content items per day on display throughout the sampling period, DRTV’s front page offers many more, with an average of 333.69 content items. Moreover, the DRTV number fluctuates over time, peaking on April 13, 2020 with 497 content items, reaching its lowest number on November 21, 2019 with 229 content items. DRTV’s higher number of items is a result of its more flexible and dynamic grid, which is wider and longer compared to BBC iPlayer’s fixed grid structure with its 10 rows and 12 columns. DRTV has, on aver-

Article: “What’s on the interface tonight?”

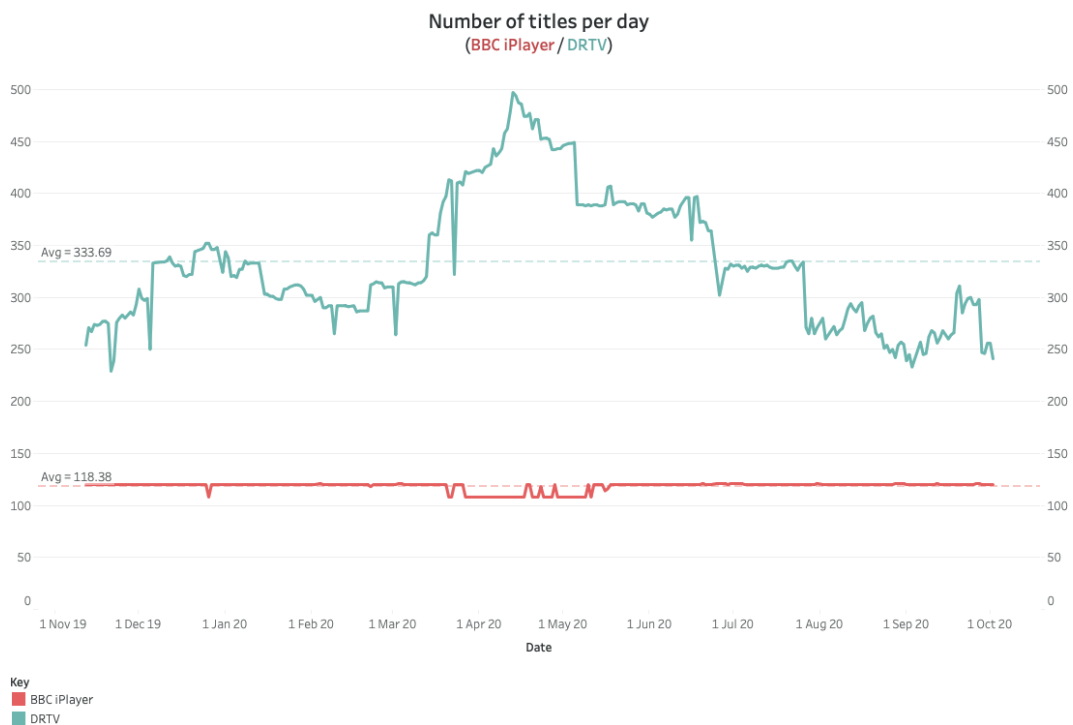


Figure 6. Number of titles in the DRTV and BBC iPlayer interfaces over time.

age, 21.83 rows, ranging between 17 rows (August 24, 2019) and 31 rows (April 14, 2020). Moreover, the number of items in DRTV’s rows range between 20 and 39 items, or an average of 23.4 (for BBC iPlayer, the number of items in each row is fixed at 12). These figures demonstrate that more content is available beyond the immediately visible section of the interface, requiring users to scroll through the page either vertically or horizontally in order to access this less visible content. However, as horizontal scrolling in particular requires additional user interaction (for each row it involves locating and clicking an arrow icon to reveal more content) the lengthy rows and the large amount of content contained within them may not actually be seen or explored by the users. In DRTV’s case, four to six content items are immediately visible (in a browser window with width of approximately 1800 pixels) without horizontal scrolling. The BBC iPlayer has four items visible. Using a retail space metaphor to understand the user’s comprehension of choice (Breugelmans, Campo, & Gijsbrechts, 2007), DRTV’s “supermarket” is better stocked. Arguably, this makes it more difficult for the user to gain an overall sense of what is available compared to iPlayer’s more “boutique” offering.

Duplicate Display of Content on the Same Day

When we compare the content within the two pages, we observe that some programmes appear at more than one position on the same date. Using the supermarket metaphor

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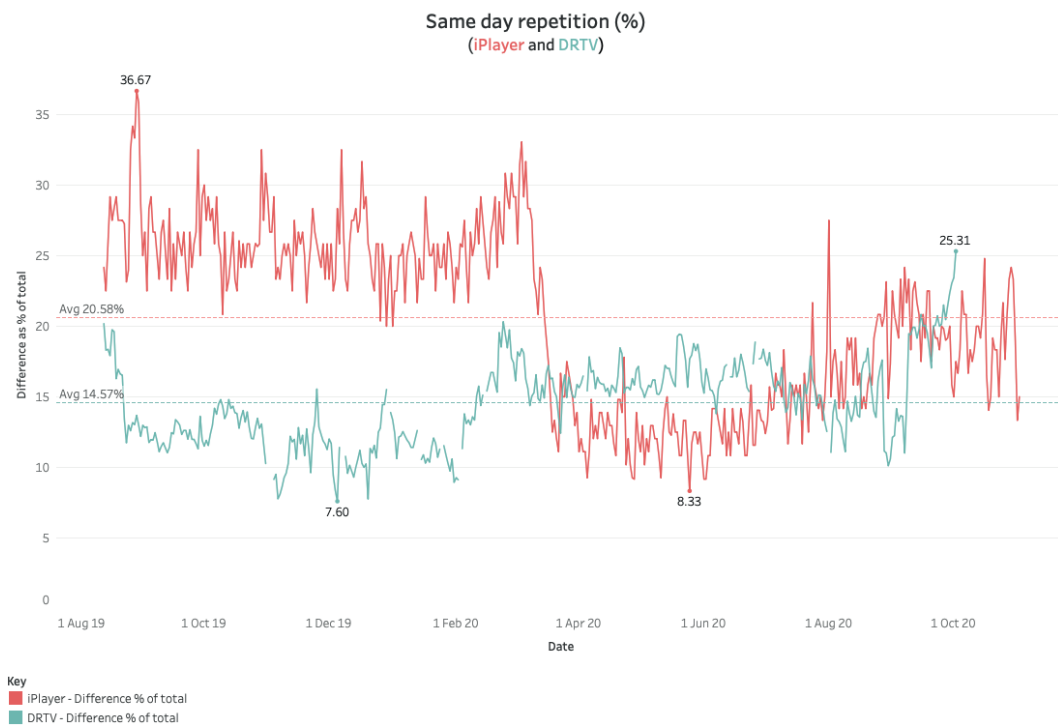


Figure 7. Percentage of duplicate content items on the same day.

once more: some items can be found at several locations in the shop. The number of unique programmes presented within the pages may therefore be lower than the total number shown in Figure 6. In Figure 7 we see that iPlayer has a higher average of duplicate programmes compared to DRTV (calculated as a percentage of overall titles in order to compensate for the different size of each interface). This high degree of same-day repetition on BBC iPlayer is somewhat surprising given the limited number of slots available and indicates a more intense marketing of content compared to DRTV’s approach. If we return to the supermarket metaphor, iPlayer’s users are thus more likely to be reminded of editorially prioritised goods when browsing the page than DRTV’s users.

Duplicate Display of Content Across Consecutive Days

While multiple instances of the same programme on the same day is one way to make users aware of content, duplicate occurrences across consecutive days is another key strategy. In Figure 8 we can see the percentage of programme titles that remain in the interface across consecutive days. Here DRTV, with 79.97 Pct., has a higher average than BBC iPlayer, which has 64.34 Pct. In other words, there is less repetition and there are more new titles (across consecutive days) on iPlayer compared to DRTV. Again, this could be explained as a result of DRTV’s larger grid, featuring, on average, 315.95 content items compared to iPlayer’s 120 slots in its grid –in the case of DRTV there is more space to fill,

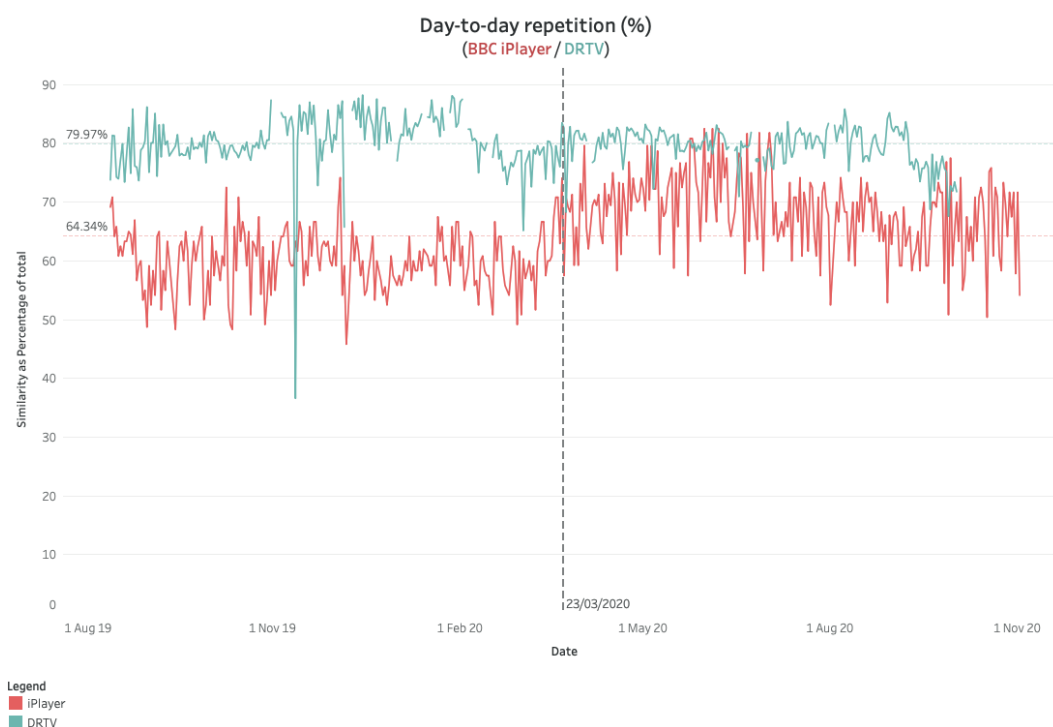


Figure 8. Consecutive day duplication. Dashed line represents the beginning of the first UK COVID-19 lockdown.

which inevitably results in a higher degree of repetition. In practical terms this means a significantly longer exposure of titles compared to BBC iPlayer. To once more return to our retail space analogy, iPlayer’s interface is akin to a small shop with several limited-time special offers, whilst DRTV’s interface is more like a large supermarket selling bulk goods – some of which appear in multiple aisles (or “rows” to use the correct interface terminology). To put it in even more crude terms, the iPlayer interface exposes more fresh produce and “one-day only” offers with a limited shelf life than DRTV’s interface with its wider selection of canned, dried and frozen foods.

Discussion

The key findings identified above demonstrate that there are notable differences in the publishing strategies of PSB VOD platforms. As such, these findings demonstrate the value of our novel methodology. At the same time, we recognise that our analysis pertains only to BBC iPlayer and DRTV and it would therefore be unwise to generalise these findings too broadly due to the limited number of case studies utilised. Nevertheless, our novel approach involves a highly empirical method of analysis that results in a more macroscopic and nuanced view of each individual platform. In other words, whilst our findings cannot be generalised or interpreted as an indication of publishing strategies in

other markets, they do offer a very precise and evidence-based view of specific platforms. Indeed, the aim of this article has not been to produce a data set or series of findings that are broadly applicable to other markets and platforms, but rather to develop a method of studying individual VOD interfaces and to consider how we might begin to examine this data on a more comparative and transnational level.

In summarising our observations, we begin to see the contours of two different publishing strategies. Where BBC iPlayer presents a smaller but more intensively marketed selection of programmes, the DRTV front page offers a much wider selection of 4,520 unique content items – 2.74 times more than the BBC iPlayer front page with its 1,646 unique content items.⁹ Returning to Hilmes once again (2003), it could be argued that the BBC iPlayer front page continues in the UK tradition of "quality" (which, in her account is to some extent a synonym for "order"), whereas the Danish DRTV front page has more in common with her notion of US "chaos". If we understand the concept of "curation" in a classic broadcast scheduling sense (see Lassen & Sørensen, 2021), where fewer programme items are given a high visibility through prime-time scheduling, the BBC iPlayer front page reflects a broadcasting curation strategy more so than DRTV – even though, as we have argued, BBC iPlayer has clearly evolved over time from a catch-up service to a destination in its own right. On the other hand, DRTV's larger interface and longer exposure of a wider range of content more closely resembles other (commercial) VOD services, and more generally the content exposure strategies of browsing-based E-commerce. Additionally, DRTV's use of highly granular micro-genres (129 collection titles compared to iPlayer's 28 collection titles) can be seen as more closely mimicking the strategies of commercial platforms such as Netflix. Not only does this demonstrate that PSBs and commercial services may have more in common than we might first think (Hilmes, 2003), but this use of micro-genres can also be explored in terms of the personalisation of content on DRTV, e.g. algorithmic selection of editorially curated collections based on the user profile, see (Sørensen, 2020).

Through our longitudinal and transnational analysis of DRTV and iPlayer, we also observe an interesting difference (possibly even a contradiction) of approach between our second and third observations (same-day duplication, and consecutive-day duplication) wherein BBC iPlayer has a high degree of same-day duplication, but a smaller amount of consecutive-day duplication in comparison with DRTV (which has a relatively low percentage of same-day duplication and a higher degree of consecutive-day duplication). The fact that these averages are taken over a long period of time (14 months) indicates that this is a consistent strategy for both platforms rather than an anomaly. It is also another good example of the kind of "invisible" publishing strategies used by VOD platforms, which can only be discerned via distant reading. It is difficult to explain this particular

9 These numbers reflect the labels used to describe content items. It is, however, difficult to disambiguate between individual episodes that might belong to these higher-level content item labels.

contradiction in the publishing strategies of iPlayer and DRTV, but it shows that there is no single or even "best" strategy for the delivery of PSB values via VOD interfaces, but rather many different possible approaches. Reflecting on these findings, it is also interesting to note that BBC iPlayer, which operates in a comparatively large and English-speaking market, does not more closely follow the niche-category model that is characteristic of commercial platforms such as Netflix (and DRTV). Indeed, one might have expected the approaches of iPlayer and DRTV that we have identified in this article to be the other way around – namely for iPlayer to use a more expansive approach and DRTV to use a more curated and refined approach.

Whilst some features of our two chosen interfaces (and subsequent data sets) cannot be directly compared – hence our earlier discussion featuring some initial observations unique to each platform – our three key observations reveal clear divergences in the publishing strategies of PSB VOD platforms. However, these strategies are not necessarily fixed, and although we maintain that the BBC and DR adopt fundamentally different approaches to the delivery of PSB values via their respective VOD platforms, it is important to note that these approaches fluctuate over time. Indeed, this is one of the key values of this form of longitudinal analysis. To illustrate this with reference to our three key observations: Although DRTV has a higher percentage of repetition (across consecutive days) compared to BBC iPlayer (the former has an average of 79.97 Pct., the latter has an average of 64.34 Pct.), there are prolonged periods in the data where there is little if any difference between the two, see Figure 8. For example, from late March 2020 onwards, consecutive-day repetition on iPlayer increases notably, bringing it more in line with DRTV – no doubt a result of the slowing down of production brought on by the first COVID-19, lockdown which occurred in late March 2020 in the UK. Likewise, although the iPlayer interface has remained consistent in its use of a 10 x 12 grid of items, there is a notable growth and decline in the size of the DRTV interface (particularly from March to July 2020). These kinds of longitudinal insights demonstrate that these interfaces are not static but that they are constantly evolving, providing further evidence of the necessity and value of "distant reading". In this particular example, our attention is drawn to an intriguing pattern in the data – a sudden growth and equally sudden decline in the size of the DRTV interface – which invites further critical interrogation.

So far, our interpretation of these findings has taken place in quantitative terms. However, one way to more contextually and qualitatively ground these findings is by examining them through the lens of policy and regulation. In this article we have utilised a retail metaphor in order to summarise the differences between our two case studies, but this approach frames our observations through the lens of consumerism. As public service offerings, the two VODs should also be evaluated in relation to public service ideals and purposes. However, the notion of what "public service broadcasting" is or should be is a highly contested one (Jakubowicz, 2007; Syvertsen, 1999).

The regulatory contexts for the two VOD services are very different. The iPlayer is only very briefly mentioned as part of BBC Online services in the "List of the UK Public Services" (BBC, 2019, p. 3) but it does not elaborate on its specific purpose or mission. The 2016 Royal Charter (Department for Culture, 2016) makes no mention of specific services such as VODs or broadcast channels. In the 2019-2023 public service contract for DR (Kulturministeriet, 2018a) the general purpose of DR's VOD "DRTV" is clearly described, as are its specific programming obligations – for example (ibid., p. 8) the continuous development of DRTV "to become a distinct offer in its own right" and its "digital possibilities", which are to be utilised "to increase the personal relevancy".¹⁰ Specific duties for DRTV are mentioned: It should feature DR's new Danish TV drama (ibid. p.4), it should support visual- and aural-impaired persons with a catch-up service (ibid. p.10), and it should offer "universes" especially for children (ibid. p. 18). Furthermore, the portfolio of VOD content must be "expanded continuously" (ibid. p. 8), including content that is not available via the linear channels, bridging the gap that emerged as the youth-oriented channel "DR3" and the culture channel "DRK" were stopped in January 2020 due to a political desire to reduce the number of DR's linear channels (Kulturministeriet, 2018b; Regeringen, 2018).¹¹ The development of DR's VOD into an "offer in its own right" thus seems to be aligned with larger media-political changes. DRTV's regulatory framing may help explain the large offer of content and the dynamic elements within its publishing strategy. The DRTV front page cannot be described as an entry page for a VOD catalogue or database, but rather as an intensively curated space with a high level of editorial presence (see Sørensen, 2020) shaped by both by day-to-day-based promotion and the heritage of DR's channel portfolios and brands (cf.: Lassen, 2020; Lassen & Sørensen, 2021).

In comparison, BBC iPlayer is, in the UK regulatory context described above, one of many online services. One might thus get the impression that UK legislators do not put the same degree of importance on VOD services when compared to their Danish counterparts. Indeed, BBC iPlayer has no specific mission in the portfolio of public broadcasting services and seems not to be prioritised to the same extent as linear channels. That being said, we acknowledge the difference between the traditionally more detailed Danish public service contracts, which are typically valid for a period of four years compared to the more general UK Royal Charter and Agreement with a typical span of ten years. Whilst the importance of public service VOD was still not recognised politically in 2016, the BBC announced a radical shift in their approach in October 2019. BBC Director of Content Charlotte Moore announced that "for the first time we're going to put

10 "DR's digitale tv-tjeneste DRTV udvikles løbende til at være et særskilt tilbud i sin egen ret med henblik på at kunne præsentere et attraktivt og relevant streamingtilbud, der udnytter de digitale muligheder for at øge den personlige relevans. DR må ikke konkurrere med private aktører, hvor det ikke tjener et klart public service-formål."

11 See also former DR Director General Christian Nissen's account of the political process leading to the cut-down (Nissen, 2020).

iPlayer at the heart of everything we do [...] much more than a catch-up service, iPlayer will become the best place to watch all BBC TV", before adding that the "iPlayer will be the gateway to all our programmes - a 'Total TV' experience" (Moore, 2019). We are still yet to see how these visions will materialise, but in our analysis, the data from BBC iPlayer indicates the use of certain strategies that are more in line with the scheduling strategies of broadcast television (i.e. a high level of same-day repetition in order to promote certain content), whereas the DRTV VOD represents an example of a VOD as an independent and organisationally prioritised media platform.

Conclusion and Future Work

In this paper we have presented a novel approach to the analysis of PSB publishing strategies, by shifting the focus from the analysis of broadcast scheduling to a longitudinal study of VOD front pages. In this way we acknowledge the VOD front page as more than simply an entry point to a catalogue of videos on demand. Instead, we understand the VOD front page as an actively curated prioritisation of content much like the scheduling of programming in time-slots of broadcast flow channels (Lassen, 2018, 2020). The novel approach points to a rich and untapped field of longitudinal data studies of VOD platforms, whilst the highly detailed data sets offer numerous other possibilities for comparative studies along many different dimensions. While the possibilities for further studies seem endless, this paper has aimed to demonstrate the feasibility of the approach, and to identify potential metrics that could be used in future studies of other VOD platforms.

In future, we plan to apply more advanced techniques for data analysis in order to reveal other latent patterns. We also plan to make use of other quantitative sources, such as flow-TV schedules, to search for correlations between VOD publishing and broadcast, as well as qualitative data such as in-depth interviews with editors, schedulers and data curators. The impact of personalisation on the PSB VOD page composition and displayed programmes constitutes another emerging field of research. Finally, a transnational study such as the one presented here calls for more data, both on a longitudinal scale but also in scope: A broader selection of VOD interfaces from more public and private providers of VOD services can help identify other trends and strategies of VOD publishing and potentially be used to inform the development of future policy and regulation. The inclusion of VOD subpages such as thematic- or channel-oriented pages, as well as catalogue studies may help to complete the picture of VOD publishing.

However, at present there is a serious shortage of such data, and before such work can be undertaken it is necessary to create more data sets based on more platforms. But doing this is much easier said than done. For one thing, scraping, cleaning and analysing data is a highly intensive labour process. The research presented here relies on data sets that took dozens if not hundreds of hours to compile, clean and analyse. There are various other methodological obstacles too. For example, scraping should ideally be performed

within the relevant geographical region as scraping from "outside" (even using a VPN) could potentially distort the results (as certain content might be blocked or different content may be offered to those in other markets). Thus, the future of this research requires the establishment a global network of researchers working collaboratively on such a venture.

Even with these methodological challenges in mind, we maintain that VOD platforms – and particularly PSB VOD platforms – are an important part of the fabric of contemporary media culture and it is therefore imperative that we devise new and more effective ways of documenting and analysing them. Our approach is the first step in that direction. Indeed, not only does our novel methodology reveal new insights about the publishing strategies of VOD platforms and draw attention to the different approaches that are being used to deliver PSB values, but it also demonstrates its potential for future work on policy and regulation.

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